

Chapter 8. State Indicators

8-45 Science and Engineering Doctorates Conferred per 1,000 Employed Science, Engineering, and Health Doctorate Holders

Description

This indicator represents the rate at which the states are training new S&E doctorate recipients for entry into the workforce. High values indicate relatively large production of new doctorate holders compared with the existing stock of employed doctorate holders. States with relatively low values may need to attract S&E doctorate holders from elsewhere to meet the needs of local employers.

Data on doctorates conferred include those with doctoral degrees in computer and mathematical sciences; the biological, agricultural, or environmental life sciences; physical sciences; social sciences; psychology; and engineering. Data on employed doctorate holders include those with doctoral degrees in computer and mathematical sciences; the biological, agricultural, or environmental life sciences; physical sciences; social sciences; psychology; engineering; and health fields. Both sets of data exclude individuals with doctorates from foreign institutions as well as those older than the age of 75. Data for doctorates conferred are presented by the location where the doctorate was earned; employment data for SEH doctorate holders are presented by employment location regardless of residence. Estimates for states with smaller populations of employed doctorate holders are generally less precise than estimates for states with larger populations.

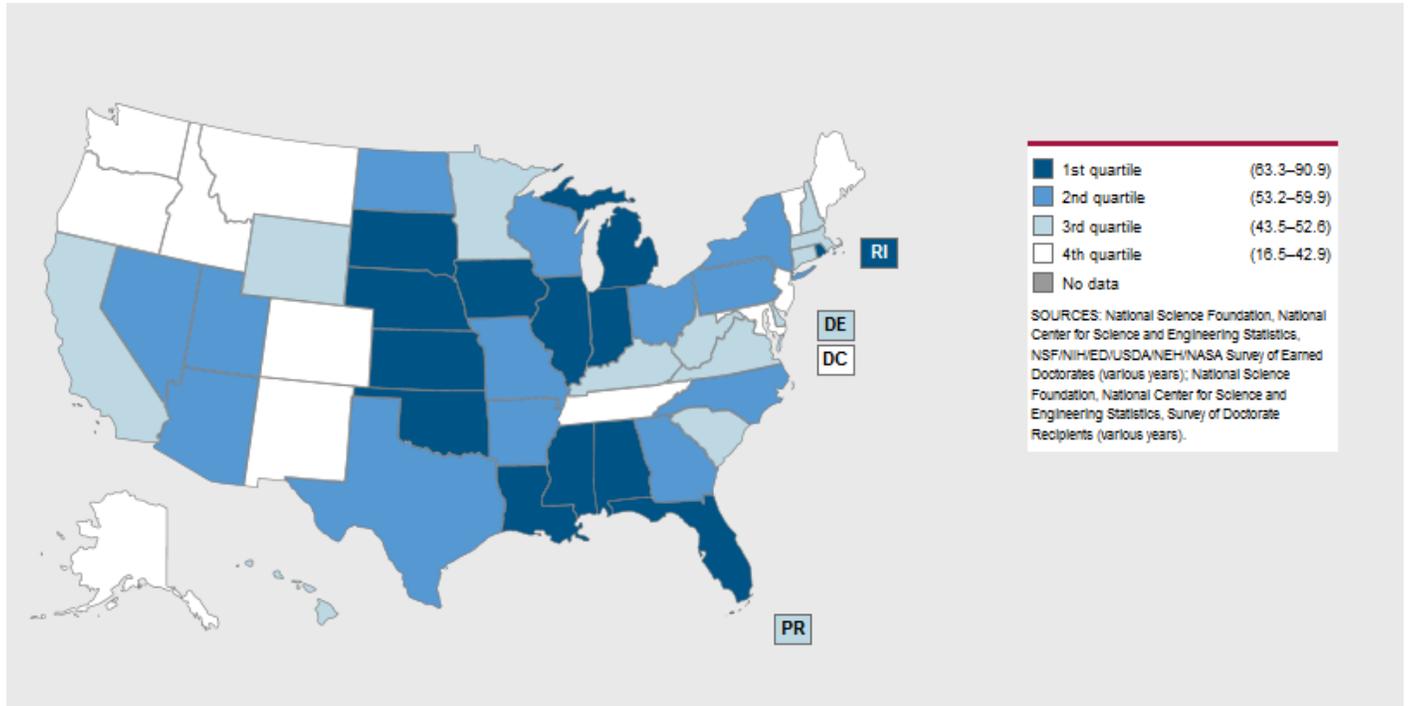
The indicator does not take into account any post-graduation mobility of recent S&E doctorate recipients to their place of employment. Doctorate recipients with temporary visas may decide to return home after graduation to begin their careers. The indicator also does not cover individuals with non-U.S. SEH doctorates who are working in the United States.

Findings

- In 2013, nearly 37,000 S&E doctorates were awarded by U.S. academic institutions—approximately 46% more than in 2003 (approximately 25,000).
- The national value rose from 42.6 S&E doctorates conferred per 1,000 employed SEH doctorate holders in 2003 to 51.3 in 2013.
- State values for S&E doctorates conferred per 1,000 SEH doctorate holders employed ranged from 16.5 to 90.9 in 2013.
- Low state values may indicate either a small S&E graduate-level educational program or a concentration of SEH doctorate-level employment opportunities that attract significant numbers of S&E doctorate holders who were educated elsewhere.

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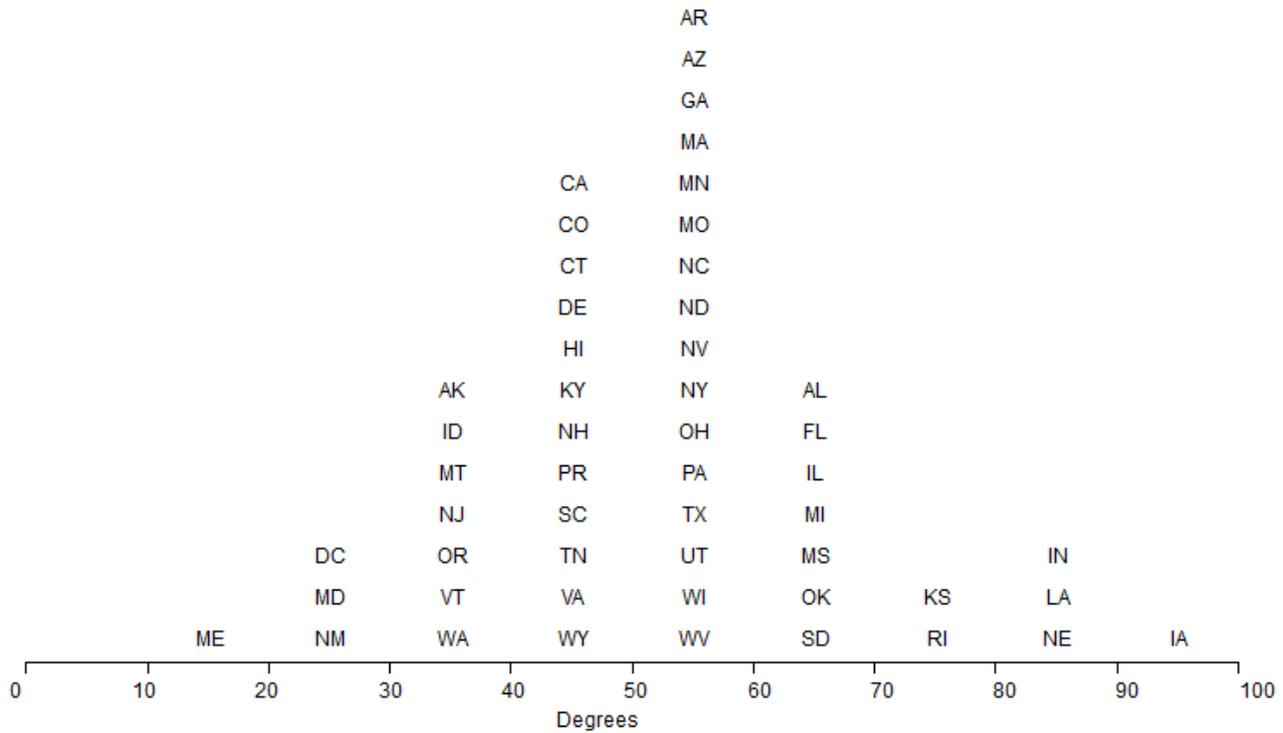
Year: 2013



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Distribution of states across indicator values



Histograms do not display states with extreme values. Please consult the data tables for exact indicator values for each state.

Chapter 8. State Indicators

 **Table 8-45** Science and Engineering Doctorates Conferred per 1,000 Employed Science, Engineering, and Health Doctorate Holders

State	S&E doctorates conferred/1,000 employed SEH doctorate holders (Degrees)									
	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
United States	55.1	54.9	52.5	46.7	44.4	42.6	48.2	50.5	48.0	51.3
Alabama	48.8	46.9	50.3	51.4	57.0	55.1	57.3	65.2	58.2	63.3
Alaska	9.1	15.8	18.2	19.2	21.7	32.7	19.1	21.7	30.0	31.4
Arizona	81.8	77.1	76.2	68.3	56.8	59.9	60.5	62.6	64.1	59.9
Arkansas	33.9	32.9	29.1	20.7	23.8	29.3	38.2	48.8	44.8	58.9
California	58.2	57.4	49.5	43.2	41.4	39.6	45.9	46.3	42.9	45.5
Colorado	56.9	55.2	52.9	50.7	41.6	43.6	36.4	41.4	37.2	42.9
Connecticut	52.3	51.5	45.2	37.4	39.1	39.3	43.0	46.3	42.3	48.2
Delaware	35.1	31.3	35.4	32.7	36.6	34.0	47.4	39.1	52.7	45.0
District of Columbia	24.4	21.1	27.0	21.7	20.6	22.7	25.0	24.7	21.0	22.9
Florida	52.2	53.1	62.0	58.6	49.9	51.4	61.6	69.6	68.9	67.5
Georgia	57.5	52.2	54.9	54.5	51.1	50.8	60.8	67.5	58.6	59.9
Hawaii	52.9	54.3	52.0	48.4	41.2	31.0	32.5	42.5	42.3	43.5
Idaho	24.7	33.5	28.5	22.0	23.2	28.0	23.9	29.6	22.5	31.4
Illinois	72.1	69.6	64.3	58.7	60.0	56.3	60.7	63.3	61.1	69.4
Indiana	90.7	87.3	90.9	76.3	69.6	68.1	77.0	80.2	79.0	85.6
Iowa	113.7	105.7	98.5	84.5	85.5	63.8	82.0	87.5	81.8	90.9
Kansas	72.7	74.3	75.0	70.8	66.0	65.6	62.3	63.3	65.8	77.6
Kentucky	45.8	51.8	52.2	40.5	37.6	39.1	50.8	56.5	52.0	49.8
Louisiana	46.7	59.8	58.7	57.0	62.8	53.5	54.9	63.3	74.2	88.1
Maine	16.7	14.0	19.5	12.9	15.0	17.6	11.3	19.1	16.7	16.5
Maryland	35.0	31.3	32.5	30.8	29.3	25.1	32.1	32.3	29.4	29.7
Massachusetts	69.8	64.2	64.4	54.7	50.1	45.1	53.2	54.6	48.9	51.4
Michigan	73.7	70.3	64.4	57.7	52.3	55.8	59.7	67.9	64.3	67.9

S&E doctorates conferred/1,000 employed SEH doctorate holders (Degrees)										
State	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
Minnesota	55.0	55.2	48.2	36.5	40.4	38.1	45.2	42.0	43.7	52.6
Mississippi	45.6	61.4	51.0	52.9	40.9	45.2	51.2	49.1	65.2	67.4
Missouri	47.4	48.8	50.7	41.5	47.3	48.1	54.1	55.3	48.6	53.2
Montana	30.7	29.4	34.7	38.7	30.0	30.0	32.5	33.8	31.3	33.5
Nebraska	53.3	56.4	59.7	66.9	56.6	66.1	49.7	61.4	64.2	84.8
Nevada	17.1	36.0	30.0	32.2	26.0	36.7	38.1	35.0	44.0	55.0
New Hampshire	49.5	43.5	42.7	33.9	30.4	38.5	38.4	41.4	41.3	48.3
New Jersey	28.6	32.1	30.5	25.5	27.3	27.8	32.2	33.3	30.4	32.6
New Mexico	27.6	27.9	21.6	22.0	19.2	20.0	23.3	21.8	25.4	28.0
New York	64.3	63.3	58.9	52.1	48.7	47.6	55.2	56.2	51.6	54.1
North Carolina	55.3	54.4	53.2	48.5	43.2	41.4	46.3	48.4	52.6	55.0
North Dakota	45.0	37.9	36.4	36.9	39.1	60.0	36.4	66.9	51.3	58.0
Ohio	58.4	60.8	65.7	47.9	52.8	47.5	58.3	62.7	59.3	57.3
Oklahoma	48.9	54.3	52.4	46.4	53.9	41.3	50.0	50.2	60.2	67.0
Oregon	52.5	55.7	47.6	42.5	37.4	32.9	38.2	33.0	34.3	35.2
Pennsylvania	58.7	59.1	57.6	50.4	47.4	43.7	50.7	52.6	51.1	53.8
Rhode Island	99.0	77.8	66.7	66.5	61.9	44.4	73.7	71.4	73.3	73.0
South Carolina	50.0	47.4	46.3	51.3	42.5	34.8	40.2	46.7	42.8	49.2
South Dakota	22.2	17.0	33.6	31.0	34.0	33.0	36.0	25.4	37.7	64.0
Tennessee	42.9	42.0	46.4	44.3	41.9	38.6	39.5	47.4	41.0	42.9
Texas	57.5	62.1	57.8	53.3	49.7	46.7	53.8	55.2	52.5	58.9
Utah	72.4	63.4	58.1	59.6	49.4	57.1	43.1	55.0	53.6	58.8
Vermont	31.3	27.5	18.9	20.0	28.9	16.1	28.8	28.3	31.7	37.8
Virginia	47.2	45.7	43.7	38.9	35.9	33.3	36.8	37.0	37.8	46.1
Washington	39.2	41.2	36.0	33.5	30.9	28.6	32.1	32.0	31.0	33.0
West Virginia	37.2	39.5	38.5	36.7	35.3	50.5	58.5	61.0	55.9	52.2
Wisconsin	75.5	85.0	80.1	69.6	61.0	63.7	60.7	69.8	60.7	58.9
Wyoming	54.3	71.4	72.2	77.1	47.5	71.7	54.3	71.4	55.0	49.1



S&E doctorates conferred/1,000 employed SEH doctorate holders (Degrees)

State	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
Puerto Rico	28.9	40.0	120.0	120.0	65.7	47.1	50.0	72.5	23.9	48.4

SEH = science, engineering, and health.

NOTES: S&E doctorates conferred are classified by the location where the doctorate was earned. In this table, the 'science and engineering' category excludes health sciences fields. Employed SEH doctorate holders are classified by employment location.

SOURCES: National Science Foundation, National Center for Science and Engineering Statistics, NSF/NIH/ED/USDA/NEH/NASA Survey of Earned Doctorates (various years); National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients (various years).

Science and Engineering Indicators 2016

State	S&E doctorates conferred									
	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
United States	25,416	26,495	27,144	25,787	25,438	25,203	29,787	32,692	33,065	36,708
Alabama	244	253	332	298	302	314	338	391	384	418
Alaska	10	19	20	23	26	36	21	26	42	44
Arizona	409	455	480	444	403	449	508	551	577	593
Arkansas	61	69	67	56	62	82	107	117	130	165
California	3,520	3,659	3,493	3,331	3,350	3,430	4,012	4,434	4,384	4,851
Colorado	506	530	566	568	491	532	477	542	551	652
Connecticut	392	407	398	367	371	385	443	491	478	521
Delaware	123	100	131	121	128	102	147	129	158	153
District of Columbia	329	283	319	300	292	313	333	323	313	341
Florida	616	674	825	856	784	823	1,085	1,295	1,419	1,499
Georgia	466	496	544	599	613	620	790	911	890	946
Hawaii	127	125	130	121	107	93	91	136	127	148
Idaho	47	57	57	44	51	70	67	83	63	91
Illinois	1,384	1,413	1,370	1,310	1,326	1,262	1,464	1,531	1,547	1,728
Indiana	689	690	691	671	668	654	762	826	861	976
Iowa	432	444	404	372	376	300	402	455	458	509
Kansas	240	260	285	255	264	269	268	272	263	349
Kentucky	165	197	214	166	173	184	254	271	265	269
Louisiana	243	299	317	308	333	289	302	329	393	458
Maine	30	28	41	27	30	37	27	44	40	43
Maryland	644	605	682	687	665	635	840	909	875	968
Massachusetts	1,494	1,445	1,500	1,493	1,457	1,363	1,724	1,911	1,803	2,021
Michigan	958	1,006	973	958	910	955	1,068	1,134	1,157	1,269
Minnesota	440	475	472	416	460	423	533	529	599	742
Mississippi	123	172	153	164	131	140	169	162	215	229
Missouri	379	410	482	390	440	438	503	553	520	590
Montana	46	47	59	58	42	51	65	71	75	77

State	S&E doctorates conferred									
	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
Nebraska	128	141	179	174	164	185	149	172	199	246
Nevada	24	54	48	58	52	77	99	98	132	143
New Hampshire	99	87	94	78	76	100	96	120	124	140
New Jersey	552	622	623	554	620	583	669	710	700	750
New Mexico	174	176	162	167	148	162	193	170	203	230
New York	2,516	2,468	2,360	2,226	2,141	2,135	2,533	2,754	2,627	2,899
North Carolina	675	691	729	762	726	721	876	973	1,083	1,193
North Dakota	54	53	51	48	43	66	51	87	77	87
Ohio	975	1,064	1,229	967	1,061	992	1,196	1,305	1,286	1,266
Oklahoma	215	228	241	195	237	190	220	226	295	315
Oregon	294	301	295	285	262	257	317	287	312	352
Pennsylvania	1,291	1,360	1,376	1,281	1,236	1,216	1,475	1,578	1,599	1,721
Rhode Island	208	179	160	173	161	142	221	200	220	219
South Carolina	215	199	222	241	217	181	237	294	274	315
South Dakota	20	17	37	31	34	33	36	33	49	64
Tennessee	330	336	394	359	377	340	395	479	472	523
Texas	1,490	1,709	1,653	1,669	1,616	1,555	1,935	2,203	2,226	2,572
Utah	268	279	279	268	237	240	237	308	316	382
Vermont	47	44	34	34	52	29	49	51	57	68
Virginia	646	662	669	645	628	630	728	788	832	1,066
Washington	415	466	482	446	458	441	543	567	585	673
West Virginia	67	79	77	77	67	101	117	122	123	120
Wisconsin	559	612	681	592	531	535	577	691	643	660
Wyoming	38	50	65	54	38	43	38	50	44	54
Puerto Rico	26	40	84	144	92	80	85	145	55	121



S&E doctorates conferred

State	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
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SEH = science, engineering, and health.

NOTES: S&E doctorates conferred are classified by the location where the doctorate was earned. In this table, the 'science and engineering' category excludes health sciences fields. Employed SEH doctorate holders are classified by employment location.

SOURCES: National Science Foundation, National Center for Science and Engineering Statistics, NSF/NIH/ED/USDA/NEH/NASA Survey of Earned Doctorates (various years); National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients (various years).

Science and Engineering Indicators 2016

Employed SEH doctorate holders										
State	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
United States	461,200	482,200	516,600	551,600	572,800	591,100	618,400	647,500	688,300	715,100
Alabama	5,000	5,400	6,600	5,800	5,300	5,700	5,900	6,000	6,600	6,600
Alaska	1,100	1,200	1,100	1,200	1,200	1,100	1,100	1,200	1,400	1,400
Arizona	5,000	5,900	6,300	6,500	7,100	7,500	8,400	8,800	9,000	9,900
Arkansas	1,800	2,100	2,300	2,700	2,600	2,800	2,800	2,400	2,900	2,800
California	60,500	63,700	70,500	77,100	80,900	86,600	87,400	95,700	102,300	106,600
Colorado	8,900	9,600	10,700	11,200	11,800	12,200	13,100	13,100	14,800	15,200
Connecticut	7,500	7,900	8,800	9,800	9,500	9,800	10,300	10,600	11,300	10,800
Delaware	3,500	3,200	3,700	3,700	3,500	3,000	3,100	3,300	3,000	3,400
District of Columbia	13,500	13,400	11,800	13,800	14,200	13,800	13,300	13,100	14,900	14,900
Florida	11,800	12,700	13,300	14,600	15,700	16,000	17,600	18,600	20,600	22,200
Georgia	8,100	9,500	9,900	11,000	12,000	12,200	13,000	13,500	15,200	15,800
Hawaii	2,400	2,300	2,500	2,500	2,600	3,000	2,800	3,200	3,000	3,400
Idaho	1,900	1,700	2,000	2,000	2,200	2,500	2,800	2,800	2,800	2,900
Illinois	19,200	20,300	21,300	22,300	22,100	22,400	24,100	24,200	25,300	24,900
Indiana	7,600	7,900	7,600	8,800	9,600	9,600	9,900	10,300	10,900	11,400
Iowa	3,800	4,200	4,100	4,400	4,400	4,700	4,900	5,200	5,600	5,600
Kansas	3,300	3,500	3,800	3,600	4,000	4,100	4,300	4,300	4,000	4,500
Kentucky	3,600	3,800	4,100	4,100	4,600	4,700	5,000	4,800	5,100	5,400
Louisiana	5,200	5,000	5,400	5,400	5,300	5,400	5,500	5,200	5,300	5,200
Maine	1,800	2,000	2,100	2,100	2,000	2,100	2,400	2,300	2,400	2,600
Maryland	18,400	19,300	21,000	22,300	22,700	25,300	26,200	28,100	29,800	32,600
Massachusetts	21,400	22,500	23,300	27,300	29,100	30,200	32,400	35,000	36,900	39,300
Michigan	13,000	14,300	15,100	16,600	17,400	17,100	17,900	16,700	18,000	18,700
Minnesota	8,000	8,600	9,800	11,400	11,400	11,100	11,800	12,600	13,700	14,100
Mississippi	2,700	2,800	3,000	3,100	3,200	3,100	3,300	3,300	3,300	3,400
Missouri	8,000	8,400	9,500	9,400	9,300	9,100	9,300	10,000	10,700	11,100
Montana	1,500	1,600	1,700	1,500	1,400	1,700	2,000	2,100	2,400	2,300

Employed SEH doctorate holders										
State	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
Nebraska	2,400	2,500	3,000	2,600	2,900	2,800	3,000	2,800	3,100	2,900
Nevada	1,400	1,500	1,600	1,800	2,000	2,100	2,600	2,800	3,000	2,600
New Hampshire	2,000	2,000	2,200	2,300	2,500	2,600	2,500	2,900	3,000	2,900
New Jersey	19,300	19,400	20,400	21,700	22,700	21,000	20,800	21,300	23,000	23,000
New Mexico	6,300	6,300	7,500	7,600	7,700	8,100	8,300	7,800	8,000	8,200
New York	39,100	39,000	40,100	42,700	44,000	44,900	45,900	49,000	50,900	53,600
North Carolina	12,200	12,700	13,700	15,700	16,800	17,400	18,900	20,100	20,600	21,700
North Dakota	1,200	1,400	1,400	1,300	1,100	1,100	1,400	1,300	1,500	1,500
Ohio	16,700	17,500	18,700	20,200	20,100	20,900	20,500	20,800	21,700	22,100
Oklahoma	4,400	4,200	4,600	4,200	4,400	4,600	4,400	4,500	4,900	4,700
Oregon	5,600	5,400	6,200	6,700	7,000	7,800	8,300	8,700	9,100	10,000
Pennsylvania	22,000	23,000	23,900	25,400	26,100	27,800	29,100	30,000	31,300	32,000
Rhode Island	2,100	2,300	2,400	2,600	2,600	3,200	3,000	2,800	3,000	3,000
South Carolina	4,300	4,200	4,800	4,700	5,100	5,200	5,900	6,300	6,400	6,400
South Dakota	900	1,000	1,100	1,000	1,000	1,000	1,000	1,300	1,300	1,000
Tennessee	7,700	8,000	8,500	8,100	9,000	8,800	10,000	10,100	11,500	12,200
Texas	25,900	27,500	28,600	31,300	32,500	33,300	36,000	39,900	42,400	43,700
Utah	3,700	4,400	4,800	4,500	4,800	4,200	5,500	5,600	5,900	6,500
Vermont	1,500	1,600	1,800	1,700	1,800	1,800	1,700	1,800	1,800	1,800
Virginia	13,700	14,500	15,300	16,600	17,500	18,900	19,800	21,300	22,000	23,100
Washington	10,600	11,300	13,400	13,300	14,800	15,400	16,900	17,700	18,900	20,400
West Virginia	1,800	2,000	2,000	2,100	1,900	2,000	2,000	2,000	2,200	2,300
Wisconsin	7,400	7,200	8,500	8,500	8,700	8,400	9,500	9,900	10,600	11,200
Wyoming	700	700	900	700	800	600	700	700	800	1,100
Puerto Rico	900	1,000	700	1,200	1,400	1,700	1,700	2,000	2,300	2,500



Employed SEH doctorate holders

State	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
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NOTES: S&E doctorates conferred are classified by the location where the doctorate was earned. In this table, the 'science and engineering' category excludes health sciences fields. Employed SEH doctorate holders are classified by employment location.

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